



**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 2**

September 21, 2018

BY ELECTRONIC MAIL

Robert Law, Ph.D.  
de maximis, inc.  
186 Center Street, Suite 290  
Clinton, New Jersey 08809

Re: Revised draft of the 2011 Caged Bivalve Study Data for the Lower Passaic River Study Area, dated November 23, 2015

Dear Dr. Law:

The U.S. Environmental Protection Agency (EPA) has reviewed the revised draft of the 2011 Caged Bivalve Study Data for the Lower Passaic River Study Area, dated November 23, 2015. The report was prepared by Windward Environmental LLC on behalf of the Cooperating Parties Group (CPG) for the Lower Passaic River Study Area.

EPA is providing the enclosed comments on the CPG's revised Study Data with this letter in accordance with Section X, Paragraph 44(d) of the Agreement. Please proceed with revisions to the Study Data within 30 days consistent with the enclosed comments. If there are any questions or clarifications needed, please contact me to discuss.

Sincerely,

A handwritten signature in black ink, appearing to read "Diane Salkie", is positioned above the typed name.

Diane Salkie, Remedial Project Manager  
Lower Passaic River Study Area RI/FS

Cc: Zizila, F. (EPA)  
Sivak, M. (EPA)  
Hyatt, B. (CPG)  
Otto, W. (CPG)

No.	Section	Comment	Response	EPA Response
1	Page 3, Table 1-1	Please update QAPP citations for the 2011 RM 10.9 hydrodynamic and 2012 supplemental LRC investigations as both have already been completed and their QAPPs finalized.	The references have been updated as requested.	<p>There are several errors in the updated references:</p> <ol style="list-style-type: none"> <li>1. The reference for the 2011 CSO/SWO sampling is listed as "Final" in Section 6; however, there have been further revisions to this QAPP since 2011. It is correct to list the 2011 version of the QAPP for the 2011 sampling, but please revise the reference to note that this version of the QAPP is "Revision 1," not "Final."</li> <li>2. The references for the 2011/2012 RM 10.9 characterization are incorrect. "AECOM 2011a" is the hydrodynamic QAPP, and "AECOM 2012b" does not exist in the list of references in Section 6. It appears that the RM 10.9 characterization QAPP was not included in Section 6. Please update the references as needed.</li> <li>3. The reference for the 2011 hydrodynamic investigation, "AECOM 2011a," is listed as Revision 0 in Section 6. Please note that the final version of this QAPP was Revision 2 and update the reference as needed.</li> <li>4. The reference for the 2011/2012 small volume CWCM sampling, "AECOM 2011b," is listed as Revision 2 in Section 6. Please note that the final version of this QAPP was Revision 3, dated July 2012, and update the reference as needed.</li> <li>5. The reference for the 2012 high volume CWCM sampling, "AECOM 2011c," should be "AECOM 2012." The AECOM 2011c reference in Section 6 is a duplicate of the AECOM 2011b reference, for the small volume CWCM sampling, except that the word "Draft" was changed to "Final." Please note that the final version of the small volume CWCM QAPP was Revision 3, dated July 2012, as noted in item 4 above.</li> <li>6. The reference for the 2012 supplemental sediment sampling, "AECOM 2012," is the high volume CWCM QAPP. It appears that the supplemental sediment sampling QAPP was not included in Section 6. Please update the reference as needed.</li> <li>7. Please remove the text "!!! INVALID CITATION !!!" from the top of the list of references in Section 6.</li> </ol>

No.	Section	Comment	Response	EPA Response
2	Page 11, Section 2.3, second paragraph	Field activities were also conducted on May 9, 2011 (to pull cages from estuarine locations). Please include in the revised text.	Text has been added to Section 2.3 to describe how water quality measurements were conducted on May 9 and June 8, 2011, at locations where cages were retrieved at the end of the study period.	Addressed
3	Page 12, Table 2-3	The column titled Day 25 is incorrect. Please revise to read Day 35.	The column has been changed to "Day 35" as requested.	Addressed
4	Page 16, First Paragraph, first sentence	"because" is spelled incorrectly, please revise.	The spelling for "because" has been revised as requested.	Addressed
5	Page 16, First Paragraph, second sentence	Text states that cages at LPR1XX lost on days 56 and 75. Should be day 56 only. Please revise.	Text has been revised as requested.	Addressed
6	Page 16, Second paragraph, first sentence	Text states mussels were pulled from estuarine locations on Day 62; however, in the first paragraph on page 15 the text states Day 61. Please revise accordingly.	Text has been revised to Day 61 in Section 2.4.	Addressed
7	Page 19, Table 3-2	ECD is not defined in the list of acronyms. Please include Electron Capture Detector in the list that follows.	The text has been added to the acronym list as requested.	Addressed
8	Page 22, Section 4.1, second sentence	Please note the typographical error, ribbedmussels should be revised to two words.	The text has been revised to two words as requested.	Addressed

No.	Section	Comment	Response	EPA Response
9	Appendix D, Table D-1	<p>The following errors or potential errors were noted, please review and if needed, revise accordingly:</p> <ul style="list-style-type: none"> <li>a. Page 1, location LPR2AD on 3/9/11 there are two sets of water quality data for a depth of 1 foot.</li> <li>b. Page 1, location LPR2AD on 3/9/11 please verify if the conductivity readings are correct as review of over site notes indicate levels of 1.47 mS/cm, where the table lists it as 0.147 mS/cm.</li> <li>c. Page 3, location LPR5YY on 3/9/11 is missing; however, water quality readings for that location are provided following those for location LPR5XX.</li> <li>d. Page 3, location LPR5XX on 3/9/11 was moved and readings were taken at both locations. It is recommended that the location ID on Table D-1 specify the old vs new location LPR5XX.</li> </ul>	<ul style="list-style-type: none"> <li>a. Table D-1 has been revised to include only one set of water quality data for LPR2AD on 3/9/11 at a depth of 1 ft.</li> <li>b. Text has been revised to 1.47 mS/cm for the conductivity at location LPR2AD on 3/9/11.</li> <li>c. Table D-1 has been revised to provide water quality measurements for LPR5YY, and to remove the erroneous measurement assigned to LPR5XX (i.e., the second half of LPR5XX data were for LPR5YY).</li> <li>d. Table D-1 has been revised to differentiate between the old and new location for LPR5XX.</li> </ul>	<ul style="list-style-type: none"> <li>a. Please note that although the first set of data was deleted, the row was not deleted, so there is now a row of blank cells. Please ensure that the empty row is deleted in the final version.</li> <li>b. Addressed</li> <li>c. Addressed</li> <li>d. Addressed</li> </ul>
10	Appendix G, Page 3, Third Paragraph, second sentence	Text states that cages at LPR1XX lost on days 56 and 75. Should be day 56 only. Please revise.	Text has been revised as requested.	The requested change was not made. Please revise the text in Appendix G, as requested.

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11	Appendix L, Tables L-2 through L-7	<p>The reporting of non-detect values are inconsistent as follows:</p> <ul style="list-style-type: none"> <li>• Tables L-1 and L-7, non-detects reported at MDL level followed by a U qualifier.</li> <li>• Tables L-2, L-3, and L-4, non-detects reported at RL (rather than MDL) level followed by a U qualifier.</li> <li>• Tables L-5 and L-6, MDL and RL values not included on report, so it is unknown whether non-detects were reported at RL or MDL level.</li> </ul> <p>Please clarify why some values are based on MDL, where others are based on RLs.</p>	<p>All non-detect values were reported to the laboratory equivalent of the reporting limit. Non-detect values for high-resolution analysis (i.e., PCB congener, PCDD/PCDF, and pesticides) provided in Tables L-5, L-6, and L-7 were reported to the sample-specific EDLs consistent with laboratory SOPs and common laboratory practices for reporting high-resolution data. This practice was also documented in Worksheet 15 of the Benthic QAPP. Non-detect metal values provided in Table L-1 were reported to the sample-specific MDL. As is common for trace metals analyses and as described in the laboratory SOPs, this value is considered the reporting limit; the MRL value on Form 1 is considered the PQL.</p>	This response is acceptable.
12	Table L-4	<p>Please note the typographical error, Dibenzo(a,c+a,h)anthracene should be Dibenzo(a,c+a,h)anthracene.</p>	Text has been revised as requested.	Addressed
13	Appendix L, Tables L-5 and L-6	<p>No reporting limits are provided on the corresponding Forms 1, so it is unclear if non-detects are reported to MDL or RL (similar to comment 11).</p>	<p>Please see response to Comment No. 11. Non-detect values for PCB congener (Table L-5) and PCDD/PCDF (Table L-6) results were reported to the sample-specific EDLs.</p>	See response to comment 11.

No.	Section	Comment	Response	EPA Response
14	Appendix L, Tables L-5 and L-6	<p>a. Detected values for Aroclors are rounded to 2 significant figures prior to calculating Total Aroclors. Total values in the table are accurate using the rounded values, but Total Aroclor values would be different if calculated from results on Form 1's. Appendix K, section 3 states that significant figures will be applied as the last step of the calculation of sums and averages. This does not appear to have been done, please review and comment as needed.</p> <p>b. What is the significance of PCB Aroclors-CPG? It appears to be the same as Total PCB Aroclors. Please provide details about aroclors used for this total.</p> <p>c. Data in table is described as "equalized data" based on the report provided in Appendix M which also presents results that are not "equalized". The laboratory standard operating procedure (SOP) states that the data was corrected for quantitative interferences using a proprietary program named "Equalizer".</p>	<p>a. Significant figures were adjusted during the validation of the 2009 LPRSA fish/crab and sediment data. Significant figures of LPRSA caged bivalve data were adjusted similarly for consistency. Appendix K has been revised to clarify, and the memorandum that describes the significant figure adjustment applied during validation of the 2009 LPRSA fish/crab and sediment data has been provided as an attachment to Appendix K.</p> <p>b. This was a duplicate of the total PCB Aroclor calculation and has been removed from Appendix L.</p> <p>c. The equalization process was used as described in the laboratory SOP. The use of equalized data was discussed with USEPA when the 2009 Fish/Decapod and Benthic QAPPs were being finalized. The equalized data were used, and the unequalized data were provided in the laboratory data package, as agreed with USEPA. A footnote has been added to Table L-5, stating that the PCB congener data are equalized data, and that unequalized data are provided in Appendices M and N.</p>	<p>a. The response is acceptable</p> <p>b. Addressed</p> <p>c. Addressed</p>
15	Appendix L, Table L-6	Total HxCDD for sample LPR7-ECST-Comp03 is reported without J-qualifier, but all individual detected HxCDD compounds used to sum were reported as estimated values (J). Please correct table appropriately.	Homolog totals and their qualifiers were provided by the laboratory. The only adjustment made to homolog qualifiers was to change the EMPC qualifier to an EMPC-J qualifier to maintain consistency within the dataset. The total HxCDD concentration for sample LPR7-ECST-Comp03 was not qualified by the laboratory, and therefore no adjustments to the qualifiers have been made.	The response is acceptable.

